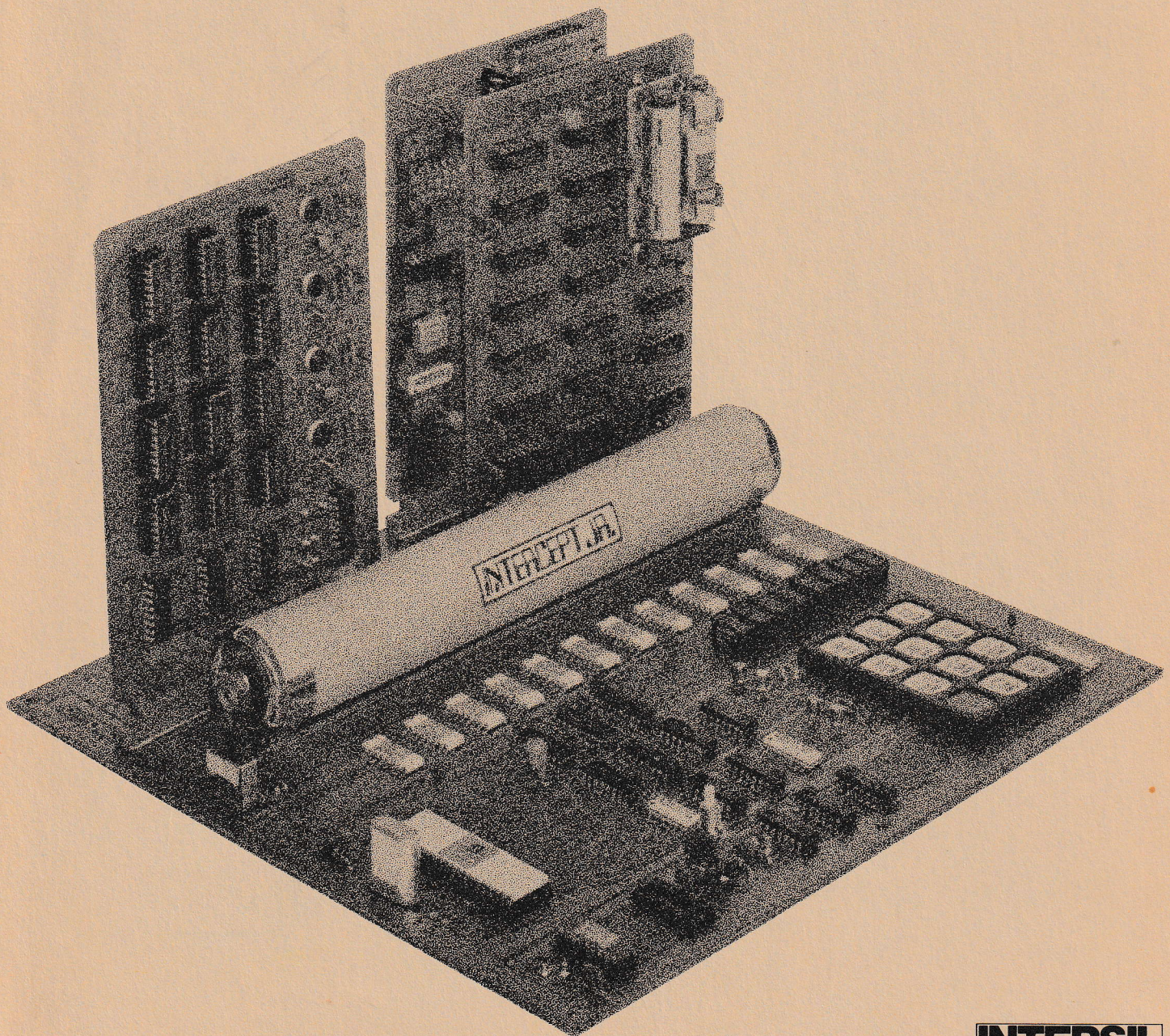


RIEGER GES. M. B. H.
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INTERCEPT JR. IM6100 MICROPROCESSOR TUTORIAL SYSTEM FROM INTERSIL



INTERSil
CMOS/LSI

Revised 11/76

INTERCEPT JR.

INTRODUCTION

The INTERCEPT JR. TUTORIAL SYSTEM is ideal as a low cost educational tool for the student, hobbyist or designer.

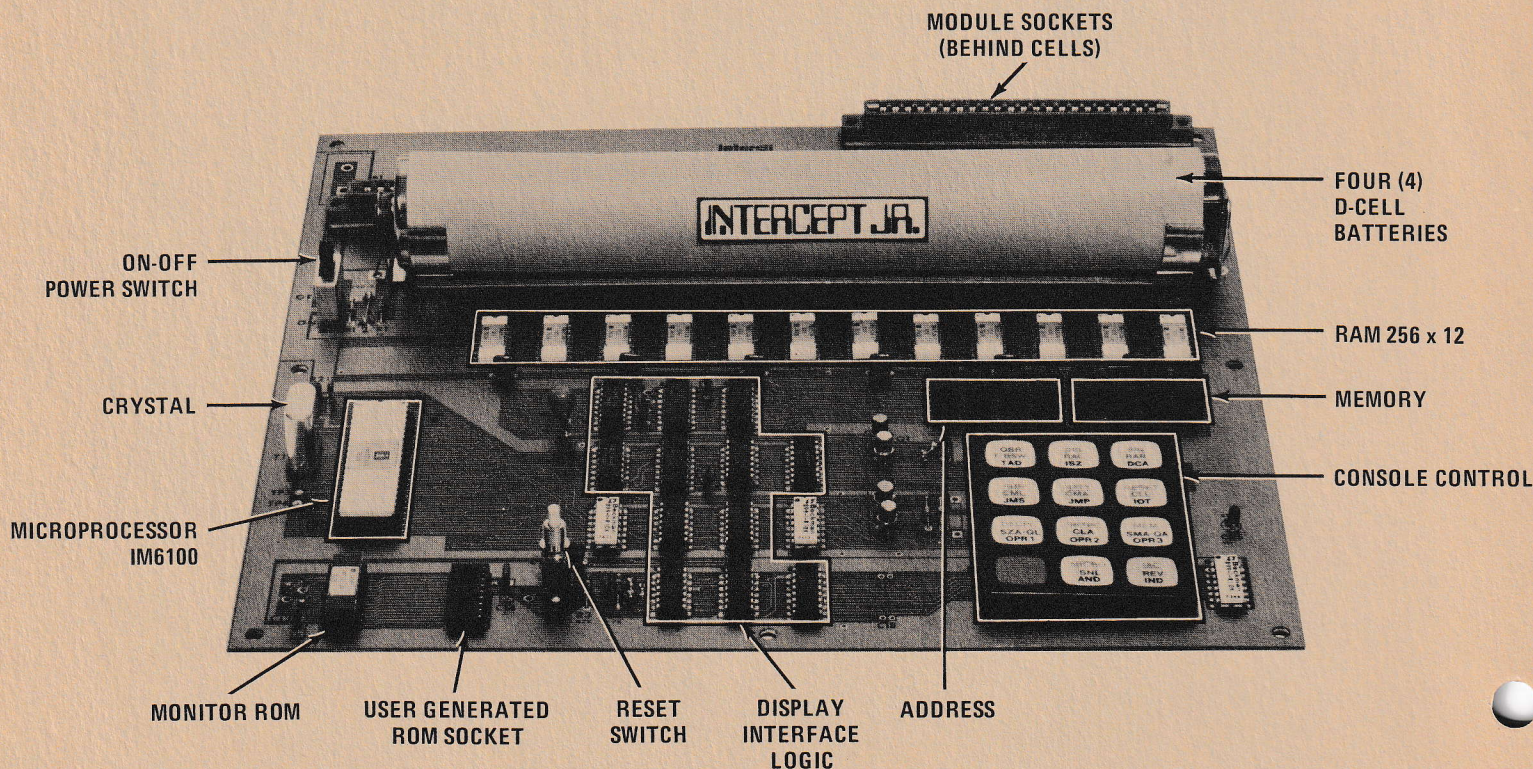
The fully assembled and factory tested system provides battery operation and a user-supplied power supply option for the evaluation of the IM6100 family of devices. The system, which recognizes the instruction set of Digital Equipment Corporation's PDP-8*, is designed with a modular concept to enable the user to purchase only those modules which meet his requirements.

A practical exposure to microprocessors, RAMs, P/ROMs and Input/Output Interfacing can be achieved with the Tutorial System and the Owner's Handbook supplied.

*Trademark-Digital Equipment Corporation, Maynard, MA.

6950-INTERCEPT JR. MODULE

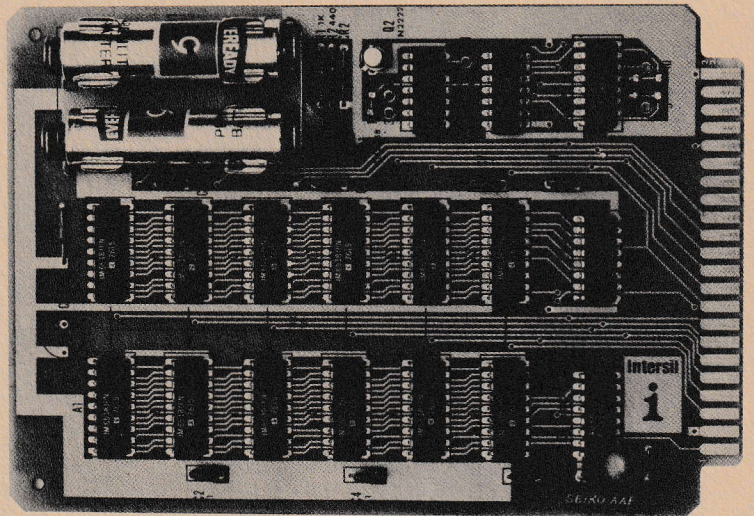
INTERCEPT JR. provides an all CMOS computer on a 10" x 11" double sided PC board. A multiple function calculator type keyboard in concert with a 1024 x 12 CMOS ROM (IM6312) monitor provides control functions, a serial bootstrap loader, a microinterpreter as well as user accessibility as a switch register via an instruction. Memory addresses and data are displayed in octal on two four-digit LED displays. The IM6100 CMOS microprocessor interfaces via a three-state bus with 256 x 12 CMOS RAM. Four D cell batteries allow for non-volatile RAM and battery operation. External terminals permit the user to provide a 5 volt or 10 volt power source. The 10 volt supply, in conjunction with changing the crystal, permits the evaluation of the Intersil high speed, or "A" version, components. A socket is provided for evaluation of a user generated CMOS ROM (IM6312/12A). Three edge connectors with 44 pins on 0.156" pin-to-pin spacing are provided for expansion to the optional boards available.



R. TUTORIAL SYSTEM FROM

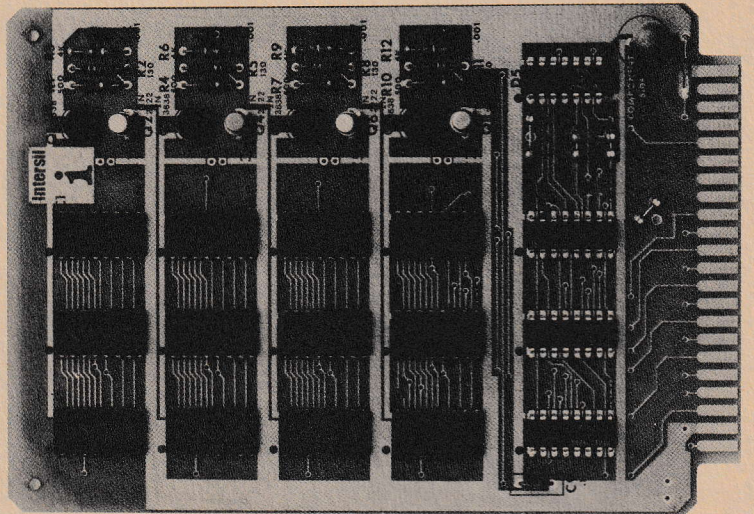
6951-M1KX12 JR. RAM MODULE

The JR. RAM MODULE, utilizing twelve (12) IM-6518 1024 x 1 CMOS RAMs on a 4½" x 6½" PC board, provides a convenient memory extension module. Non-volatility is assured by two (2) pen-light batteries which are provided.



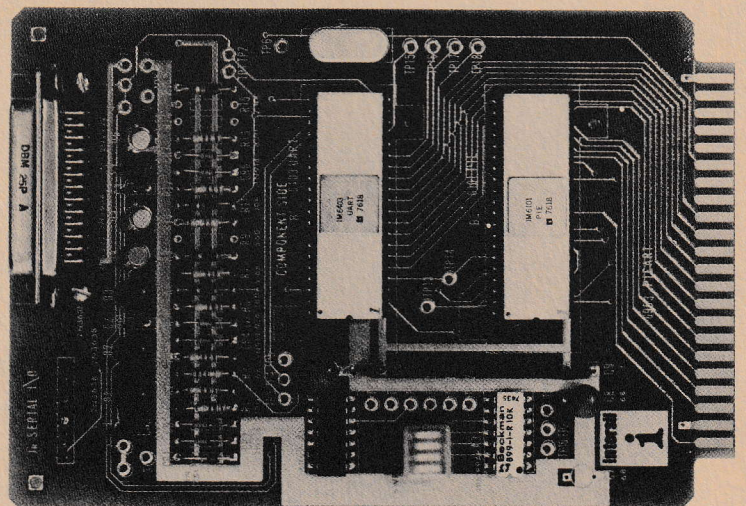
6952-P2KX12 JR. PROGRAMMABLE ROM-P/ROM MODULE

The JR. P/ROM MODULE provides the user with twelve (12) sockets organized on a 4½" x 6½" PC board. The user has the option of utilizing the IM5623, 256 x 4, or IM5624, 512 x 4 three-state-output Avalanche Induced Migration (AIM) programmable bipolar P/ROMs to obtain from 256 to 2048 words of program. Each of the four (4) rows of sockets are power strobed to permit 0.75 watts average when the P/ROMs are accessed.



6953-PIEART JR. SERIAL I/O MODULE

The JR. SERIAL I/O MODULE featuring the IM-6101 CMOS Parallel Interface Element (PIE) and the IM6403 CMOS Universal Asynchronous Receiver Transmitter (UART) provides the user with serial I/O capability with both RS232 and 20 mA current loop interfaces. The IM6100 controls the UART via the PIE. The CMOS ROM monitor contains a bootstrap routine for loading programs from the 6953-PIEART using BIN** formatted media.

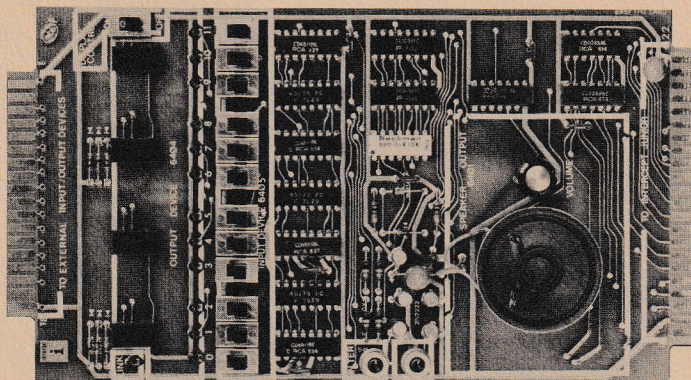


**Digital Equipment Corporation Binary Format

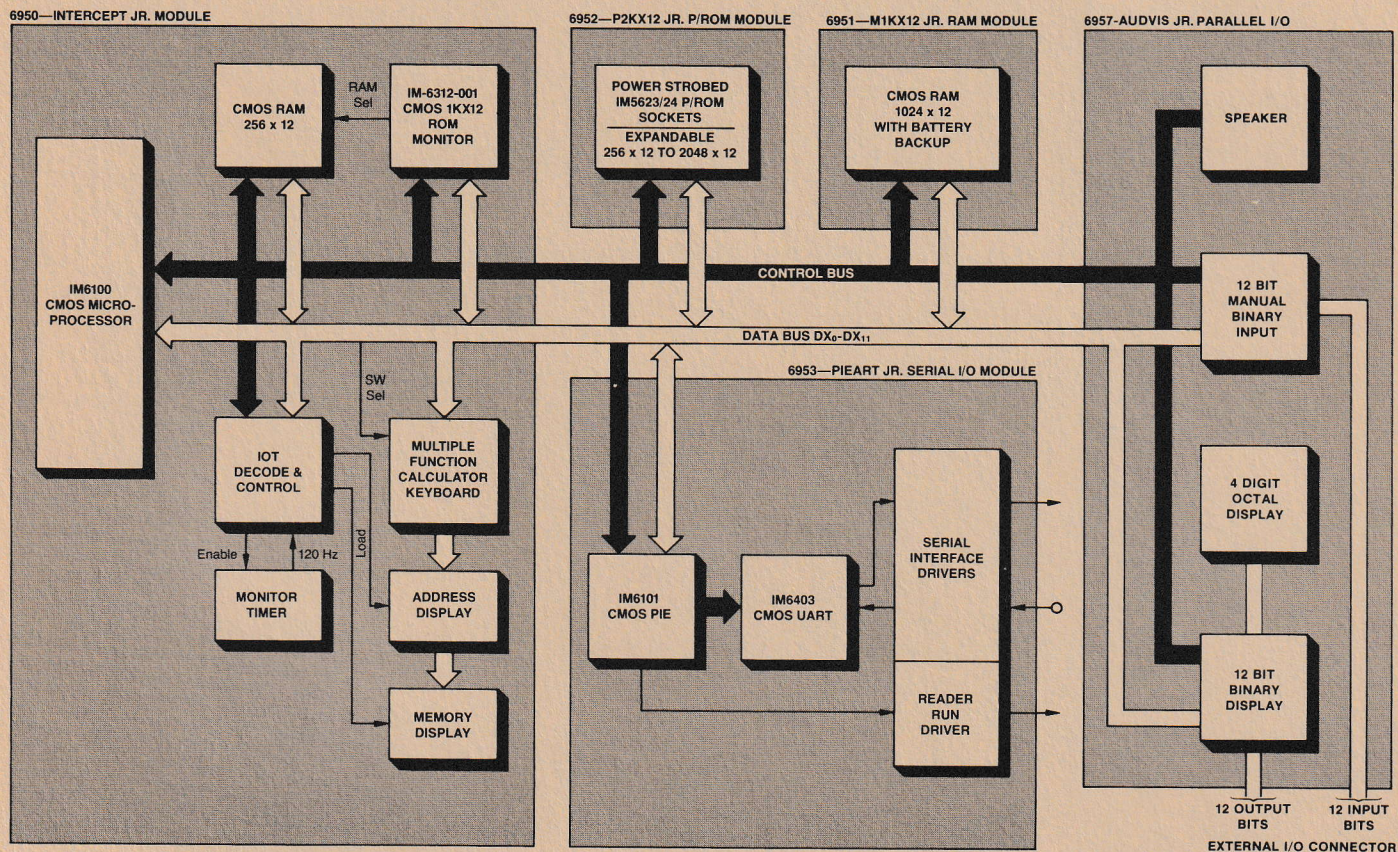
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6957-AUDVIS JR. AUDIO VISUAL MODULE

The JR. AUDIO VISUAL MODULE provides the user with an excellent tutorial device. A switch register, acting as an input, can be loaded into two LED display registers providing both binary and seven segment octal readout. A volume controlled speaker can be "clicked" or used to produce tones by controlling the rate at which the speaker is pulsed. A display control on-off switch is provided for power conservation.



BLOCK DIAGRAM



FROM INTERSIL

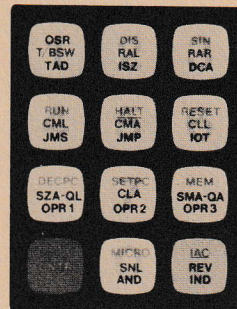
MICROINTERPRETER SIMPLIFIES PROGRAM ENTRY

EXAMPLE:

Add 7_{10} (0007_8) which is stored in memory location 22_{10} (0026_8), to 15_{10} (0017_8), which is stored in memory location 23_{10} (0027_8), and store the result in 21_{10} (0025_8).

PROGRAM

```
0020  CLA      /Clear Accumulator
0021  TAD 0026 /Read Location 0026
0022  TAD 0027 /Add Location 0027
0023  DCA 0025 /Deposit Result in 0025
0024  HLT      /Halt
```



KEYBOARD OPERATION AND DISPLAY

OPERATION

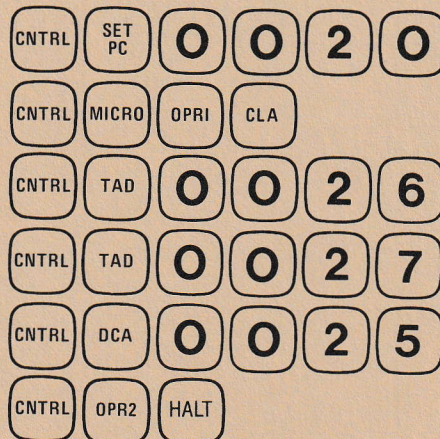
KEYBOARD ENTRIES (Left to Right)

ADDRESS

DISPLAY

MEMORY

PROGRAM

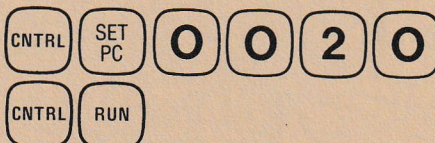


0020	* * * *
0020	7 2 0 0
0021	1 0 2 6
0022	1 0 2 7
0023	3 0 2 5
0024	7 4 0 2

EXIT FROM MICROINTERPRETER



EXECUTE PROGRAM



0020	7 6 0 0
0025	0 0 2 6

Answer is displayed as 0026_8 (22_{10}).

* Don't Care

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